



UNITED STATES PATENT AND TRADEMARK OFFICE

AK

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,320	12/28/2001	Yong-Dae Park	8045-26 (PX1401-US/SSD)	8898
7590	12/03/2003		EXAMINER	
F. Chau & Associates, LLP Suite 501 1900 Hempstead Turnpike East Meadow, NY 11554			LEE, GRANVILL D	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/034,320	PARK ET AL.
Examiner	Art Unit	
Granvill D Lee, Jr	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 04 August 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-17 and 19-22 is/are rejected.

7) Claim(s) 18 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). ____ .
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ . 6) Other: ____ .

DETAILED ACTION

Response to Applicant's Argument

After review of applicant's amendments and comments, the examiner finds such arguments unpersuasive. Applicant's comments as to Hwang Shau and White are well taken, however in further review of the prior art, the examiner has found that Okunaga and Seo et al. read upon applicant's claimed invention. As these are a new grounds for rejection not necessitated by applicant's amended claimed invention, and they are not to be considered final rejections of the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 9-11 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Okunaga (US Pat. 5,412,333).

In view of these claims (esp. 1, 9 & 20) Okunaga teaches a Mos-device method for transmitting a control signal (Col. 1 lines 27-32) to an option pad

(#44) of an integrated circuit chip at its package (#18) level (Col. 1 lines 52-54) comprising the steps of:

electrically isolating one (Fig. 4 VDDPIN) of a plurality of commonly connected power transmitting pins (Fig. 4) of the integrated circuit package (#18); connecting the electrically isolated power transmitting pin (Fig. 4) to the option pad (#44) to thereby transmit a control signal from outside through the electrically isolated power transmitting pin to the option pad.

In view of claim 2, Okunaga shows a device wherein the commonly connected power transmitting pins can be connected to ground (Col. 1 lines 53-58).

In view of claim 3, Okunaga shows a device wherein the commonly connected power transmitting pins is connected to a power supply (Col. 1 line 66-Col. line 2).

In continuing view of claim 9, An integrated circuit package having an integrated circuit chip for comprising:
an integrated circuit chip being mounted in the integrated circuit package (#18) comprising an option pad and a plurality of power pads connected with power lines connected to an internal circuit; power transmitting group pins (Fig. 2 Gndpins) connected to the power pads of a plurality of power transmitting pins assigned and formed at the integrated circuit package; and at least one signal transmitting pin connected to the option pad (#14) but

electrically isolated from the power transmitting group pins for transmitting a test control signal the option pad (Col. 1 lines 25-31).

In view of claim 10, Okunaga shows the power pads are ground voltage pads when the power transmitting pins are ground voltage pins.

In view of claim 11, Okunaga shows the the power pads are power supply voltage pads when the power transmitting group pins are supply power voltage pins.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-8, 12-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okunaga in view of Seo et al. (US Pat. 5,768,173).

In view of these claims, Okunaga teaches a method for transmitting a control signal to an option pad of an integrated circuit chip at its package level comprising the steps of: electrically isolating one of a plurality of commonly connected power transmitting pins of the integrated circuit package; connecting the electrically isolated power transmitting pin to the option pad to thereby transmit a control signal from outside through the electrically isolated power transmitting pin to the option pad. However, Okunaga fails to discuss a

dynamic random access memory (DRAM) that includes a burn-in test. Seo et al. makes a point to mention that DRAM's are increasingly coming under burn-in and other tests (Col. 1 lines 20-30).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the Okunaga Mos device with the DRAM device of Seo et al. with the objective of achieving a reliable device that now incorporates a burn-in testing means at a level before the packageing, saving millions of defective devices.

In view of claims 4-6 and 12-14, Seo et al. suggests that burn-in tests (Col. 1 lines 20-30) and input/output tests (Abstr.) among others can be conducted on the circuits.

In view of claims 7 and 15, Seo et al. uses a standard grid pin arrangement (Fig. 6), but a ball grid arrangement can be used, since it is notoriously well known to use solder balls at the package or circuit level.

In view of claims 8 and 16, Seo et al. uses an integrated circuit that includes a DRAM device (Col. 1 lines 15-25).

In view of claim 19, Seo et al. employs an inverter structure in the device (Fig. 1 #42 and #43).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okunaga in view of Rosenthal (US Pat. 5,051,615).

An integrated circuit package having an integrated circuit chip for comprising: an integrated circuit chip being mounted in the integrated circuit package (#18) comprising an option pad and a plurality of power pads connected with power lines connected to an internal circuit; power transmitting group pins (Fig. 2 Gndpins) connected to the power pads of a plurality of power transmitting pins assigned and formed at the integrated circuit package; and at least one signal transmitting pin connected to the option pad (#14) but electrically isolated from the power transmitting group pins for transmitting a test control signal the option pad (Col. 1 lines 25-31).

However, Okunaga fails to use an electrostatic discharge device (ESD) in conjunction with the option pad. Rosenthal in making a comparator circuit, uses a ESD device (#46) in series with an option pad (#48). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teachings of Hwang and Shau with those of Rosenthal in order to establish some mechanism for protecting the circuit against charge (Col. 5 lines 15-25), which is the sole reason for using any ESD device in any circuit.

Allowable Subject Matter

Claims 18 and 21-22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications for the examiner should be directed to Granvill Lee whose telephone number is (703) 306-5865. The examiner can be normally reached on Monday thru Thursday from 7:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are not successful, the examiner's supervisor, Matthew Smith can be reached on (703) 308-1323. The fax phone number for this group is (703) 872-9306.

Any inquiry of a general nature relating to status or otherwise should be directed to the receptionist whose telephone number is 703-308-1782.

Examiner
Granvill Lee
Art Unit 2825

Gl
11/20/03

C. Merchant
GRANVILL LEE
PRIMARY EXAMINER